



## ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v18

Stylesheet Version v18.0

Title of Invention	Ball Grid Array Package Substrates and Method of Making the Same																																																																																								
<p>Application Number: 10/020207</p> <p>Confirmation Number: 7969</p> <p>First Named Applicant: Reza-Ur Khan</p> <p>Attorney Docket Number: 1875.1640000</p> <p>Search string: ( 5045921 or 5291062 or 5397917 or 5490324 or 5572405 or 5583377 or 5583378 or 3790866 or 5578869 or 5642261 or 5648679 or 5691567 or 5736785 or 5798909 or 5835355 or 5844168 or 5883430 or 5889324 or 5894410 or 5901041 or 5903052 or 5905633 or 5953589 or 5972734 or 5977626 or 5986885 or 5998241 or 6002169 or 6011304 or 6028358 or 6077724 or 6084777 or 6114761 or 6117797 or 6122171 or 6133064 or 6140707 or 6160705 or 6162659 or 6163458 or 6166434 or 6184580 or 6212070 or 6380623 or 6347037 or 6362525 or 5801432 or 5438216 or 6069407 or 20010045644 or 20020109226 ).pn.</p> <p>US Patent Documents</p> <p>Note: Applicant is not required to submit a paper copy of cited US Patent Documents</p> <table border="1"><thead><tr><th>init</th><th>Cite.No.</th><th>Patent No.</th><th>Date</th><th>Patentee</th><th>Kind</th><th>Class</th><th>Subclass</th></tr></thead><tbody><tr><td><input checked="" type="checkbox"/></td><td>1</td><td>5045921</td><td>1991-09-03</td><td>Lin et al.</td><td></td><td></td><td></td></tr><tr><td><input checked="" type="checkbox"/></td><td>2</td><td>5291062</td><td>1994-03-01</td><td>Higgins, III</td><td></td><td></td><td></td></tr><tr><td><input checked="" type="checkbox"/></td><td>3</td><td>5397917</td><td>1995-03-14</td><td>Ommen et al.</td><td></td><td></td><td></td></tr><tr><td><input checked="" type="checkbox"/></td><td>4</td><td>5490324</td><td>1996-02-13</td><td>Newman</td><td></td><td></td><td></td></tr><tr><td><input checked="" type="checkbox"/></td><td>5</td><td>5572405</td><td>1996-11-05</td><td>Wilson et al.</td><td></td><td></td><td></td></tr><tr><td><input checked="" type="checkbox"/></td><td>6</td><td>5583377</td><td>1996-12-10</td><td>Higgins, III</td><td></td><td></td><td></td></tr><tr><td><input checked="" type="checkbox"/></td><td>7</td><td>5583378</td><td>1996-12-10</td><td>Marrs et al.</td><td></td><td></td><td></td></tr><tr><td><input checked="" type="checkbox"/></td><td>8</td><td>3790866</td><td>1974-02-05</td><td>Meyer et al.</td><td></td><td></td><td></td></tr><tr><td><input checked="" type="checkbox"/></td><td>9</td><td>5578869</td><td>1996-11-26</td><td>Hoffman et al.</td><td></td><td></td><td></td></tr><tr><td><input checked="" type="checkbox"/></td><td>10</td><td>5642261</td><td>1997-06-24</td><td>Bond et al.</td><td></td><td></td><td></td></tr></tbody></table>		init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass	<input checked="" type="checkbox"/>	1	5045921	1991-09-03	Lin et al.				<input checked="" type="checkbox"/>	2	5291062	1994-03-01	Higgins, III				<input checked="" type="checkbox"/>	3	5397917	1995-03-14	Ommen et al.				<input checked="" type="checkbox"/>	4	5490324	1996-02-13	Newman				<input checked="" type="checkbox"/>	5	5572405	1996-11-05	Wilson et al.				<input checked="" type="checkbox"/>	6	5583377	1996-12-10	Higgins, III				<input checked="" type="checkbox"/>	7	5583378	1996-12-10	Marrs et al.				<input checked="" type="checkbox"/>	8	3790866	1974-02-05	Meyer et al.				<input checked="" type="checkbox"/>	9	5578869	1996-11-26	Hoffman et al.				<input checked="" type="checkbox"/>	10	5642261	1997-06-24	Bond et al.			
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11	5648679	1997-07-15	Chillara et al.	
12	5691567	1997-11-25	Lo et al.	
13	5736785	1998-04-07	Chiang et al.	
14	5798909	1998-08-25	Bhatt et al.	
15	5835355	1998-11-10	Dordi	
16	5844168	1998-12-01	Schueller et al.	
17	5883430	1999-03-16	Johnson	
18	5889324	1999-03-30	Suzuki	
19	5894410	1999-04-13	Barrow	
20	5901041	1999-05-04	Davies et al.	
21	5903052	1999-05-11	Chen et al.	
22	5905633	1999-05-18	Shim et al.	
23	5953589	1999-09-14	Shim et al.	
24	5972734	1999-10-26	Carichner et al.	
25	5977626	1999-11-02	Wang et al.	
26	5986885	1999-11-16	Wyland	
27	5998241	1999-12-07	Niwa	
28	6002169	1999-12-14	Chia et al.	
29	6011304	2000-01-04	Mertol	
30	6028358	2000-02-22	Suzuki	
31	6077724	2000-06-20	Chen	
32	6084777	2000-07-04	Kalidas et al.	
33	6114761	2000-09-05	Mertol et al.	
34	6117797	2000-09-12	Hembree	
35	6122171	2000-09-19	Akram et al.	
36	6133064	2000-10-17	Nagarajan et al.	
37	6140707	2000-10-31	Plepys et al.	
38	6160705	2000-12-12	Stearns et al.	
39	6162659	2000-12-19	Wu	
40	6163458	2000-12-19	Li	
41	6166434	2000-12-26	Desai et al.	
42	6184580	2001-02-06	Lin	B1
43	6212070	2001-04-03	Atwood et al.	B1
44	6380623	2002-04-30	Demore	B1
45	6347037	2002-02-12	Iijima et al.	B2
46	6362525	2002-03-26	Rahim	B1

47	5801432	1998-09-01	Rostoker et al.
48	5438216	1995-08-01	Juskey et al.
49	6069407	2000-05-30	Hamzehdoost

## US Published Applications

Note: Applicant is not required to submit a paper copy of cited US Published Applications

init	Cite.No.	Pub. No.	Date	Applicant	Kind	Class	Subclass
1	1	20010045644	2001-11-29	Huang	A1		
2	2	20020109226	2002-08-15	Khan et al.	A1		

## Signature

Examiner Name	Date
<i>[Signature]</i>	<i>2/20/09</i>



FORM PTO-1449

## SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

ATTY. DOCKET NO.  
1875.1640000APPLICATION NO.  
10/020,207APPLICANT  
Khan *et al.*FILING DATE  
December 18, 2001GROUP  
2822

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA1	09/783,034	—	Khan <i>et al.</i>	—	—	02/15/2001
	AB1	09/849,537	—	Zhang <i>et al.</i>	—	—	05/07/2001
	AC1						
	AD1						
	AE1						
	AF1						
	AG1						
	AH1						
	AI1						
	AJ1						
AK1							

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AL1	10-189835	07/1998	Japan	H01L	23/24	Yes No
	AM1	10-247703	09/1998	Japan	H01L	23/12	Yes No
	AN1	2000-286294	10/2000	Japan	H01L	21/60	Yes No
	AO1	10-247702	09/1998	Japan	H01L	23/12	Yes No
	AP1	10-50877	02/1998	Japan	H01L	23/12	Yes No

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	1	English-language Abstract of JP 10-189835, published July 21, 1998, 2 pages (last visited March 14, 2003).
	AS	1	English-language Abstract of JP 10-247703, published September 14, 1998, 1 page.
	AT	1	English-language Abstract of JP 2000-286294, published October 13, 2000, 2 pages (last visited March 14, 2003).

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## FOREIGN PATENT DOCUMENTS

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	AL2	11-17064	01/1999	Japan	H01L	23/14	Yes No
	AM2	11-102989	04/1999	Japan	H01L	23/12	Yes No
	AN2	7-283336	10/1995	Japan	H01L	23/12	Yes No
	AO2	61-49446	03/1986	Japan	H01L	23/36	Yes No
	AP2	2001-68512	03/2001	Japan	H01L	21/60	Yes No

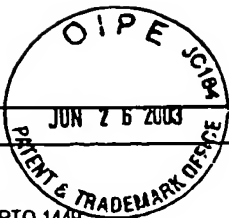
## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	2	English-language Abstract of JP 2001-68512, published March 16, 2001, 1 page (last visited October 2, 2002).
	AS	2	English-language Abstract of JP 10-247702, published September 14, 1998, 2 pages (last visited January 25, 2002).
	AT	2	English-language Abstract of JP 10-50877, published February 20, 1998, 1 page (last visited October 2, 2002).

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	AO3						Yes No
	AP3						Yes No

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	3	English-language Abstract of JP 11-17064, published January 22, 1999, 1 page.
	AS	3	English-language Abstract of JP 11-102989, published April 13, 1999, 1 page.
	AT	3	English-language Abstract of JP 7-283336, published October 27, 1995, 1 page.

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	AN4						Yes No
	AO4						Yes No
	AP4						Yes No

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	4	English-language Abstract of JP 61-49446, published March 11, 1986, 1 page.
	AS	4	Kamezos, M., "An EPBGA Alternative," <i>Advanced Packaging</i> , June 1998, pages 90, 92, 94, and 96.
	AT	4	Zhao, Z., Ph.D., "Thermal Design and Modeling of Packages," <i>IEEE Short Courses</i> , Broadcom Corporation, October 25, 2000, 95 pages.

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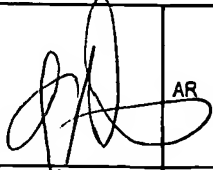
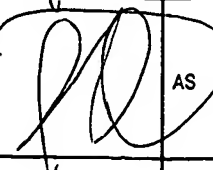
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	AL5						Yes No
	AM5						Yes No
	AN5						Yes No
	AO5						Yes No
	AP5						Yes No

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	5	Zhao, Z., Ph.D., "IC Package Thermal Issues and Thermal Design," ASAT, Inc., January 15, 2000, 98 pages, presented at 2 <sup>nd</sup> International Icepak User's Group Meeting, Palo Alto, CA, on February 7, 2000.
	AS	5	Schueler, R.D. <i>et al.</i> , "Performance and Reliability of a Cavity Down Tape BGA Package," <i>IEEE Electronic Packaging Technology Conference</i> , 1997, pages 151-162.
	AT	5	

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